UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION

ECOFACTOR, INC.	
Plaintiff,	Case No. 6:21-cv-00428-ADA
v.	**JURY TRIAL DEMANDED**
ECOBEE, INC.,	
Defendant.	

PLAINTIFF ECOFACTOR INC.'S RESPONSIVE CLAIM CONSTRUCTION BRIEF

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I.   **INTRODUCTION**

ecobee argues that all four disputed claim terms are indefinite, but all of these positions are fundamentally flawed. ecobee ignores surrounding claim language and highly relevant specification teachings that clarify the scope of the claims. ecobee also raises numerous arguments that appear to challenge not the definiteness of the claims but whether they comply with other requirements of 35 U.S.C. § 112 that are, of course, not at issue at the *Markman* stage. And ecobee's reliance upon a conclusory expert analysis does not overcome these problems, as that expert analysis is similarly flawed. As explained herein and in the accompanying declaration of Mr. Robert Zeidman, the scope of each challenged claim is reasonably certain to a POSITA, such that ecobee's indefiniteness arguments must be rejected.

II.   **LEGAL STANDARD FOR INDEFINITENESS**

"[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with ***reasonable certainty, those skilled in the art*** about the scope of the invention." *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014).[1] As the Supreme Court has acknowledged, "[t]he definiteness requirement, so understood, mandates clarity, while recognizing that ***absolute precision is unattainable***." *Id.* at 910. Because "[a] patent is presumed valid under 35 U.S.C. § 282," any defense of indefiniteness must be proven "by ***clear and convincing evidence***." *Biosig Instruments, Inc. v. Nautilus, Inc.*, 783 F.3d 1374, 1377 (Fed. Cir. 2015). This burden falls on the accused infringer. *See Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1327 (Fed. Cir. 2008). The Federal Circuit has also made clear that "breadth is not indefiniteness." *BASF Corp. v. Johnson Matthey Inc.*, 875 F.3d 1360, 1367 (Fed. Cir. 2017). And notably, "patent documents need not include subject matter that

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[1] All emphasis in quoted material has been added unless otherwise noted.

is known in the field of the invention and is in the prior art, for patents are written for persons experienced in the field of the invention." *S3 Inc. v. NVIDIA Corp.*, 259 F.3d 1364, 1371 (Fed. Cir. 2001) (reversing indefiniteness finding and further noting that "[t]o hold otherwise would require every patent document to include a technical treatise for the unskilled reader").

III.   BACKGROUND OF THE TECHNOLOGY

As EcoFactor's expert, Mr. Zeidman, explains in his supporting declaration ("Zeidman Decl."), the asserted patents generally relate to the control of HVAC systems and promoting efficient energy consumption. *See, e.g.*, Zeidman Decl. ¶¶ 16-23. HVAC systems consume significant amounts of energy when they run, so reducing the time over which an HVAC system must run in order to keep the user comfortable will result in energy savings. In addition, HVAC equipment can be damaged by what is commonly referred to as "rapid cycling" or "short cycling," which occurs when the equipment cycles off (e.g., AC stops cooling) but very soon thereafter cycles back on (e.g., AC starts cooling), resulting in inefficient energy usage and potential damage to the equipment. Moreover, detecting manual changes made by a user to the home's temperature setpoint were difficult to ascertain for traditional thermostats. The asserted patents address these and other problems with traditional HVAC control systems by providing innovative solutions that promote energy efficiency while still accounting for user comfort and preferences.

IV.   LEVEL OF ORDINARY SKILL IN THE ART

A person of ordinary skill in the art at the time of the invention would have had (1) a bachelor's degree in engineering, computer science, or a comparable field of study, and (2) at least 2-3 years of professional experience in temperature controls, embedded control systems, electronic thermostats, or HVAC controls, building energy management and controls, or other similarly relevant industry experience. Zeidman Decl. ¶ 24. Additional relevant industry experience may

compensate for lack of formal education or vice versa. *Id.*

ecobee offers no reason why a POSITA would need five years of experience to achieve a level of "ordinary" skill. Two years would suffice. Further, the field of invention is not limited only to "building energy management and controls," but also includes temperature controls, embedded control systems, electronic thermostats, and HVAC controls for residential environments. *See, e.g., id.*; '890 patent at 2:65-3:57 (describing need for improvements to "residential HVAC control"), 8:52-9:4 (thermostat 108 includes "a microprocessor 254, memory 256, a display 258, a power source 260, a relay 262," network connectivity, "controls 266"), Figs. 1, 2, 4.

EcoFactor's proposed framing of the level of ordinary skill is also consistent with what ALJ Elliot found to be the appropriate level of ordinary skill in ITC Investigation No. 337-TA-1258 ("the 1258 Investigation"), which involved the parties here and other EcoFactor patents. *See* Ex. F (Inv. No. 337-TA-1258, Order No. 18, dated Sept. 1, 2021 ("1258 Markman Order") at 7-8. ecobee's expert, Dr. Auslander, proposes that five years of experience should be required, which is essentially the same proposal rejected by ALJ Elliot in the 1258 Investigation. *See* Auslander Decl. ¶ 24; Ex. G at 8 ("Professional experience in a more specialized area, even if for a shorter time (as Complainant contends), seems more appropriate than a more general area of experience having no direct connection to the relevant technology, even if for a longer time (as Respondents contend).").

V.   DISPUTED CLAIM TERMS

A.   **"evaluate one or more parameters" ('100 patent, claim 1) / "evaluating … one or more parameters relating to the operation of the said ventilation system" ('100 patent, claim 9)**

EcoFactor's Proposed Construction	ecobee's Proposed Construction
No construction necessary; plain and ordinary meaning	**Indefinite**

ecobee argues that claims 1 and 9 are indefinite because they "provide absolutely no indication as to what kind of evaluation is to be performed on the recited parameters, let alone ***how*** to perform such an evaluation." Init. Br. at 3. ecobee's expert, Dr. Auslander, further states that the specification "does not inform a POSITA as to ***how*** any such evaluation should be performed." Auslander Decl. ¶ 39. As an initial matter, ecobee appears to be conflating the definiteness requirement with the enablement requirement., which is improper. *See, e.g.*, *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1358 n.2 (Fed. Cir. 1999) ("definiteness and enablement are analytically distinct requirements"). ecobee fails to acknowledge the clarity provided by the claim language itself and the specification, which provide reasonable certainty to a POSITA as to the scope and meaning of these claim terms. *See* Zeidman Decl. ¶¶ 25-30.

Focusing first on the claims themselves, the surrounding claim language provides valuable context as to the scope of claims 1 and 9. *See id.* ¶¶ 27-28. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005) ("the claims themselves provide substantial guidance as to the meaning of [] terms"). For example, claim 1 recites "a computer processor in communication with said thermostatic controller, the processor configured to: … evaluate one or more parameters including at least the outside temperature measurements and the predicted rate of change, and to determine whether to adopt said first interval or said second interval based upon the values of said parameters." '100 patent at cl. 1 (further clarifying that the rate of change is predicted using stored inside temperature measurements and outside temperature measurements). In other words, the claim language itself indicates which parameters (at least) are evaluated, how the result of the evaluation is used, and that computer hardware that is configured to perform the evaluation. The same is true for claim 9:

> evaluating, with at least one computer processor, one or more parameters relating
> to the operation of the said ventilation system, wherein the computer processor:

accesses stored data comprising a plurality of internal temperature measurements taken within a structure and a plurality of outside temperature measurements relating to temperatures outside the structure;

uses the stored data to predict a rate of change of temperatures inside the structure in response to at least changes in outside temperatures; and

wherein evaluating the one or more parameters comprises evaluating at least the outside temperature measurements and the predicted rate of change;

determining which of at least a first interval and a second interval is to be enforced as a delay by said thermostatic controller in light of at least the outside temperature measurements and the predicted rate of change, wherein said second interval is longer than said first interval.

'100 patent at cl. 9.

This contextual claim language is also consistent with the specification, including portions of column 8 and Figure 7 referenced by Dr. Auslander. *See* Auslander Decl. ¶ 39; '100 patent at 8:39-9:44, Fig. 7, 8a, 8b, 8c. For example, the specification explains:

FIG. 7 shows a flowchart illustrating the steps required to initiate a compressor delay adjustment event. In step 1102, server 106 retrieves parameters such as weather conditions, the current price per kilowatt-hour of electricity, and the state of the electric grid in terms of supply versus demand for the geographic area that includes a given home. In step 1104 server 106 determines whether to instantiate the compressor delay adjustment program for certain homes in response to those conditions. In step 1106, server 106 determines whether a specific home is subscribed to participate in compressor delay events. If a given home is eligible, then in step 1108 the server retrieves the parameters needed to specify the compressor delay routine. These may include user preferences, such as the weather, time of day and other conditions under which the homeowner has elected to permit hysteresis band changes, the maximum length of compressor delay authorized, etc. In step 1110 the appropriate compressor delay settings are determined, and in step 1112 the chosen settings are communicated to the thermostat.

'100 patent at 8:39-57. With reference to a series of three figures, the specification goes on to "illustrate how changes in compressor delay settings affect HVAC cycling behavior by plotting time against temperature." *Id.* at 8:58-60; *see also id.* at 8:60-9:44. For example, Figure 8(c) "shows how the same compressor delay [as in Fig. 8(b)] can result in different thermal cycling with different weather conditions," where "[t]he greater the amount by which outside temperature

exceeds inside temperature in the air conditioning context, the more rapidly the inside temperature will increase during an off cycle, and the slower the air conditioner will be able to cool during the on cycle." *Id.* at 9:31-37.

A POSITA would understand the relationship between outside temperature and predicted rate of change, particularly in light of the specification's teachings. Zeidman Decl. ¶ 30. Knowing the outside temperature and the predicted rate of change of inside temperature in response to outside temperature changes allows inside temperature to be predicted for different circumstances. *Id.* Using such information, a delay interval can be more intelligently selected because factors such as extreme outside temperatures or a high predicted rate of change impacts the selection of an appropriate delay interval for a given HVAC system. *Id.* A POSITA would appreciate that considerations such as these impact the evaluation of at least outside temperature and predicted rate of change to determine which delay interval is most appropriate. *Id.* Especially in light of the claims and specification, the scope and meaning of claims 1 and 9 would be reasonably certain to a POSITA.

To the extent ecobee's argument is that claims 1 and 9 are indefinite because they are broad enough to cover multiple methods of evaluating, long-standing precedent makes clear that "**breadth is not indefiniteness**." *BASF Corp. v. Johnson Matthey Inc.*, 875 F.3d 1360, 1367 (Fed. Cir. 2017) (reversing indefiniteness finding); *accord SmithKline Beecham Corp. v. Apotex Corp.*, 403 F.3d 1331, 1341 (Fed. Cir. 2005) (same quotation); *In re Gardner*, 427 F.2d 786, 788 (CCPA 1970) (same quotation). The inventor of the '100 patent was entitled to claim the full scope of his invention. It is unclear exactly what information ecobee believes was necessary to include in the claims, but extraneous details not needed to understand the scope of the claims cannot support a finding of indefiniteness. *See, e.g.*, *Via Vadis, LLC v. Blizzard Ent., Inc.*, 815 F. App'x 539, 544

(Fed. Cir. 2020) ("As to Blizzard's argument that the term 'prespecified parameters' is indefinite because neither the claims nor the specification explains how the data transmission parameters are specified or who or what specifies those parameters, we see no reason why in the context of this patent such details are needed to understand the scope and meaning of the disputed claim term."); *S3 Inc. v. NVIDIA Corp.*, 259 F.3d 1364, 1371 (Fed. Cir. 2001) (reversing indefiniteness finding and noting that "patent documents need not include subject matter that is known in the field of the invention and is in the prior art, for patents are written for persons experienced in the field of the invention").

Because the claim language and the specification provide more than reasonable certainty as to the scope and meaning of the "evaluate" claim terms, ecobee's arguments should be rejected.

B.   "the predicted rate of change" ('597 patent, claim 9)

EcoFactor's Proposed Construction	ecobee's Proposed Construction
"rate of change": difference between inside temperature measurements divided by the span of time between the measurements Remainder of phrase: No construction necessary; plain and ordinary meaning	**Indefinite**

ecobee argues that claim 9 is invalid for indefiniteness because "the predicted rate of change" lacks explicit antecedent basis. Init. Br. at 5-7. ecobee is wrong because the claim language itself, and especially when understood in the context of the specification, provides reasonable certainty to a POSITA as to the scope and meaning of this claim term. *See* Zeidman Decl. ¶¶ 31-36.

At the outset, the law is clear that "claims are not necessarily invalid for a lack of antecedent basis." *Microprocessor Enhancement Corp. v. Texas Instruments Inc.*, 520 F.3d 1367, 1376 (Fed. Cir. 2008). In particular, "when a claim's meaning would reasonably be understood by skilled

artisans when read in light of the specification, it is not invalid." *Solas OLED Ltd. v. Samsung Elecs. Co.*, No. 2:21-CV-00105-JRG, 2022 WL 36222, at *5 (E.D. Tex. Jan. 4, 2022) (citing *Energizer Holdings, Inc. v. I.T.C.*, 435 F.3d 1366, 1370 (Fed. Cir. 2006)). As in the *Solas* case, "the Court must decide whether Claim [9], considered in the context of the specification and despite the alleged lack of explicit antecedent basis for the term, has a reasonably ascertainable meaning to a skilled artisan." *Id.* (finding that the lack of antecedent basis for "the logic" did not render the claim indefinite).

Applying this standard, "the predicted rate of change" has a reasonably ascertainable meaning to a POSITA. *See* Zeidman Decl. ¶¶ 31-36. That meaning is consistent with the parties' agreed construction for "rate of change," which is "difference between inside temperature measurements divided by the span of time between the measurements." ecobee's expert, Dr. Auslander, asserts that "a POSITA would not understand what parameter the 'rate of change' refers to, over what time period the rate should be calculated or how to calculate the recited predicted rate of change." Auslander Decl. ¶ 43. This assertion is not only incorrect, but also at least some of his assertions appear to target issues of enablement, rather than indefiniteness. *See Process Control*, 190 F.3d at 1358 n.2.

Both the claims and the specification indicate to a POSITA that "the predicted rate of change" of claim 9 refers to a predicted rate of change of temperatures inside the structure in response to at least changes in outside temperatures. *See* Zeidman Decl. ¶ 33. For example, below are two consecutive limitations within claim 9 of the '597 patent:

- 9[c] using the stored data to **predict changes in temperatures inside the structure in response to at least changes in outside temperatures**

- 9[d] calculating scheduled programming of setpoints in the thermostatic controller based on **the predicted rate of change**, the scheduled programming comprising at least a first automated setpoint at a first time and a second automated setpoint at a second

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time to control the heating ventilation and air conditioning system

As claim 9[c] makes clear and as Mr. Zeidman explains, the claimed method predicts changes in inside temperature in response to changes in outside temperatures. Zeidman Decl. ¶ 34. This relationship (resulting from "in response to") can be expressed as a rate of change and graphed as such, which is consistent with claim 9[d] reciting "the predicted rate of change." ecobee and Dr. Auslander note that claim 17 recites "predict a rate of change of temperatures inside the structure" and assert that this shows the challenged limitation of claim 9 must be directed to something different, based on the notion that claim 9 otherwise would have used the same language as claim 17. Init. Br. at 6; Auslander Decl. ¶ 44. This is an unreasonable assumption and not consistent with how a POSITA would understand the claims. Zeidman Decl. ¶ 34.

EcoFactor's proposed construction is consistent with the specification as well. Zeidman Decl. ¶ 35. For example, the specification explains: "The ability to **predict the rate of change in inside temperature** in a given house under varying conditions may be applied by in effect holding the desired future inside temperature as a constraint and using the ability to **predict the rate of change** to determine when the HVAC system must be turned on in order to reach the desired temperature at the desired time." '597 patent at 5:35-40. Neither their nor Dr. Auslander identify anything in the specification or prosecution history that support this position. Init. Br. at 5-7; Auslander Decl. ¶¶ 42-45. And while there is no requirement that the claim language match the specification word-for-word, in this case, there even is such matching—only further demonstrating that a POSITA would understand claim 9. *See In re Skvorecz*, 580 F.3d 1262, 1268-69 (Fed. Cir. 2009) ("There is no requirement that the words in the claim must match those in the specification disclosure."). ecobee falls far short of proving indefiniteness.

C.   **"protect the compressor from rapid cycling" ('890 Patent, claim 1)**

EcoFactor's Proposed Construction	Respondents' Proposed Construction
No construction necessary; plain and ordinary meaning	**Indefinite**

ecobee argues that claim 1 is invalid for indefiniteness because the scope of "protect the compressor from rapid cycling" is not reasonably certain. Init. Br. at 7-9. This is feigned ignorance and is belied by ecobee's own use of such terminology. A POSITA would readily understand the scope of this claim term, particularly given the context of the claims and the specification, and the knowledge of a POSITA. Zeidman Decl. ¶¶ 37-43.

As an initial matter, ecobee again conflates indefiniteness with other requirements of Section 112, arguing that "[t]he specification provides no guidance on **how** the compressor delay circuit is to be configured to achieve the claimed protection." At this stage, the question before the Court is one of definiteness, not enablement or written description.

Applying the law of indefiniteness, it is clear that a POSITA would readily understand the terms "protect" and "rapid cycling" (sometimes referred to as "short cycling"). *See* Zeidman Decl. ¶ 39. For example, the specification explains what rapid cycling is, how it can negatively impact the HVAC system and use energy inefficiently, and how thermostats commonly use a "hysteresis zone" or "dead zone" around a customer's temperature setpoint, which helps protect against rapid cycling:

> Because most thermostats control HVAC systems that do not offer infinitely variable output, traditional thermostats are designed to permit the temperature as seen by the thermostat to vary above and below the setpoint to **prevent the HVAC system from constantly and rapidly cycling on and off,** which is inefficient and harmful to the HVAC system. The temperature range in which the thermostat allows the controlled environment to drift is known as both the **dead zone** and, more formally, the **hysteresis zone**. The hysteresis zone is **frequently set at +/−1 degree** Fahrenheit. Thus if the setpoint is 68 degrees, in the heating context the thermostat will allow the inside temperature to fall to 67 degrees before turning the heating

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system on, and will allow it to rise to 69 degrees before turning it off again.

'890 patent at 2:5-18. For a given home and HVAC system, the home's inside temperature will typically change after the HVAC system cycles off, and this is especially true if there is a significant difference between the inside temperature and outside temperature. Zeidman Decl. ¶ 40. The patent explains that "[t]he greater the amount by which outside temperature exceeds inside temperature in the air conditioning context, the more rapidly the inside temperature will increase during an off cycle, and the slower the air conditioner will be able to cool during the on cycle. '890 patent at 20:24-28. The specification further describes how HVAC systems can also impose a compressor delay, including with a hysteresis zone. *See, e.g.*, '890 patent at 19:21-20:38.

In addition, the specification provides a series of examples in which compressor delays of varying lengths are used to protect against rapid cycling. *See* Zeidman Decl. ¶¶ 41-42. For example, the specification describes a compressor delay of three minutes with respect to Figure 21a and a delay of eight minutes with respect to Figures 21b and 21c. *See, e.g.*, '890 patent at 19:46-20:35, Figs. 20, 21a, 21b, 21c. To the extent ecobee is contending that the claims must provide numerical precision as to the length of delay in order to be definite, such a position would be contrary to law. *See, e.g.*, *Enzo Biochem, Inc. v. Applera Corp.*, 599 F.3d 1325, 1336 (Fed. Cir. 2010) ("The claims are not indefinite even if some experimentation is required to determine the exact level of detection achieved by the applicants using their exemplary linkage groups."). And in any event, even though claim 1 is not limited to a specific amount of time that would constitute a "rapid cycling," specification disclosures such as those referenced above provide guidance as to what may be considered a rapid cycle for a given HVAC system. Similarly, the Court should reject any argument by ecobee that "protect" is indefinite because the patent does not quantify exactly what degree of protection must be provided. Even if this were a term of degree, such terms are permissible in patent claims. If ecobee wishes to invalidate claim 1, it must meet the high standard

for proving indefiniteness. ecobee cannot.

While the intrinsic evidence already provides ample clarity, it also bears noting that there is no shortage of extrinsic evidence demonstrating that a POSITA would readily understand the claim term "protect the compressor from rapid cycling." This includes evidence that *ecobee itself uses such terminology* in its patents and website. Indeed, "rapid cycling" and "short cycling" are commonly used in the field of HVAC control, including with variations of the word "protect" (and similar terms like "prevent" and "reduce"). For example, smart thermostat providers like ecobee and Google commonly use such terminology. *See, e.g.*, Ex. A ¶ 88 (ecobee patent application stating: "In practice, using a larger humidex value will *reduce* the *short-cycling* of HVAC system 20, which is harder on the equipment and is generally less efficient heating and cooling."); Ex. B at 4, 5, 6 (ecobee webpage stating: "This setting *prevents* your equipment from *short cycling*."; "This setting *prevents* your equipment from *short cycling* and helps to conserve energy."; "This setting *prevents* your compressor from *short cycling* … ."); Ex. C at 24:23-27 (Google patent stating: "The maintenance band 1106 may be a form of hysteresis to *prevent the rapid cycling* of the HVAC system as the temperature drifts around the setpoint temperature 1120."); Ex. D at 16:53-59 (Google patent stating: "Although some HVAC components, such as many AC compressors, have a built in "lock out" feature that *prevents rapid cycling*, not all components have such protection. … In such cases the delay such as in steps 812 and/or 816 are useful in *preventing rapid cycling* of HVAC components that are otherwise *unprotected*.") Ex. E (Google Nest help search results for "*short cycling*"). Examples such as these further demonstrate that the meaning of "protect the compressor from rapid cycling" would be reasonably certain to a POSITA in the field of the '890 patent.

D. "performance characteristic" ('890 Patent, claim 17)

EcoFactor's Proposed Construction	Respondents' Proposed Construction
No construction necessary; plain and ordinary meaning	**Indefinite**

ecobee argues that the claim term "performance characteristic" is also indefinite. ecobee is again incorrect, as a POSITA would readily understand the scope of "performance characteristic," particularly given the context of the claims and the specification, and the knowledge of a POSITA. Zeidman Decl. ¶¶ 44-49.

Claim 17 states that the recited "performance characteristic" is "generated based at least in part on a previous operation of the HVAC system." '890 patent at cl. 17. A POSITA would readily understand that an HVAC system's function is to change inside temperature, which indicates that a "performance characteristic" of an HVAC system relates to its ability to change inside temperature. Zeidman Decl. ¶ 45. This is consistent with the contextual language of claim 17, which clarifies that the performance characteristic is based at least in part on previous operation of the HVAC system. Such prior operation would have involved heating or cooling to change inside temperature. '890 patent at cl. 17; Zeidman Decl. ¶ 45.

As Mr. Zeidman explains, an example of a performance characteristic is the rate of change of inside temperature in response to outside temperature, which includes contributions of the HVAC system operating to provide heating or cooling. Zeidman Decl. ¶ 46. Mr. Zeidman further explains that an "on" rate of change reflects the ability of the HVAC system to change inside temperature over time for given inside and outside temperatures. *Id.* This is consistent with the contextual claim language because the patent describes generating rates of change based on historical data reflecting how a given HVAC system performed under different circumstances. *Id.*

The specification of the '890 patent provides extensive descriptions of predicting the rate of change in inside temperature under varying conditions. *Id.* ¶ 47. Such rates of change are generated based at least in part on previous operation of the HVAC system. For example, the specification explains:

> For example, FIG. 9a shows a graph of inside temperature, outside temperature and HVAC activity for a 24 hour period. When outside temperature 1502 increases, inside temperature 1504 follows, but with some delay because of the thermal mass of the building, unless the air conditioning 1506 operates to counteract this effect. When the air conditioning turns on, the inside temperature stays constant (or rises at a much lower rate or even falls) despite the rising outside temperature. In this example, frequent and heavy use of the air conditioning results in only a very slight temperature increase inside the house of 4 degrees, from 72 to 76 degrees, despite the increase in outside temperature from 80 to 100 degrees.
>
> FIG. 9b shows a graph of the same house on the same day, but assumes that the air conditioning is turned off from noon to 7 PM. As expected, the inside temperature 1504 a rises with increasing outside temperatures 1502 for most of that period, reaching 88 degrees at 7 PM. Because server 106 logs the temperature readings from inside each house (whether once per minute or over some other interval), as well as the timing and duration of air conditioning cycles, database 300 will contain a history of the thermal performance of each house.
>
> The performance data will allow the server 106 to calculate an effective thermal mass for each such structure—that is, the rate at which the temperature inside a given building will change in response to changes in outside temperature. Because the server will also log these inputs against other inputs including time of day, humidity, etc., ***the server will be able to predict, at any given time on any given day, the rate at which inside temperature should change for given inside and outside temperatures***.
>
> The ability to predict the ***rate of change in inside temperature*** in a given house under varying conditions may be applied by in effect holding the desired future inside temperature as a constraint and using the ability to predict the rate of change to determine when the HVAC system must be turned on in order to reach the desired temperature at the desired time. The ability of an HVAC system to vary turn-on time in order to achieve a setpoint with minimum energy use may be thought of as Just In Time (JIT) optimization.

'890 patent at 12:33-13:6, Figs. 9a, 9b; *see also id.* at 13:21-15:31, Figs. 11, 12a, 12b, 12c, 12d, 13; Zeidman Decl. ¶ 47.

Based on the arguments in ecobee's brief and accompanying declaration, it seems as though ecobee simply searched the '890 patent for the specific phrase "performance characteristic"—and then concluded that because this specific phrase does not appear in the specification, its meaning cannot be ascertained. But "[t]here is no requirement that the words in the claim must match those in the specification disclosure." *In re Skvorecz*, 580 F.3d at 1268-69. As Mr. Zeidman explains, a POSITA reading the claim language and specification would understand with reasonable certainty the scope and meaning of "performance characteristic," which includes the rate of change of inside temperature in response to outside temperature. Zeidman Decl. ¶ 49. The term "performance characteristic" provides the requisite reasonable certainty to a POSITA and is not indefinite.

VI.   CONCLUSION

For the reasons set forth above, EcoFactor respectfully requests that the Court reject ecobee's indefiniteness arguments.

Date: February 1, 2022   Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that counsel of record who are deemed to have consented to electronic service are being served on February 1, 2022, with a copy of this document via the Court's CM/ECF.

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/s/ Reza Mirzaie
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